

ADDITIONAL NOTES ON THE GENUS PRIVA. VIII

Harold N. Moldenke

PRIVA Adans.

Additional & amended bibliography: Schau. in A. DC., Prodr. 11: 529, 532—536, 555, & 556. 1847; Gürke in Engl., Pflanzenw. Ost-Afr. C: 338. 1895; Fedde & Schust., Justs Bot. Jahresber. 40 (2): 335. 1915; Heathcote in Heywood, Flow. Pl. World 237. 1978; Mold., Phytologia 43: 420—426. 1979.

PRIVA CORDIFOLIA var. FLABELLIFORMIS Mold.

Additional bibliography: Greenway & Vesey-Fitzgerald, Journ. East Afr. Nat. Hist. Soc. Nat. Mus. 28: 21. 1972; Mold., Phytologia 34: 261 (1976) and 43: 426. 1979.

Recent collectors describe this plant as a ruderal woody herb, growing in groups, to 3 feet tall, the sap colorless, the flowers odorless, and have found it growing in black loam of regenerating cultivated areas, at 300—900 feet altitude, flowering and fruiting in January. The corollas are said to have been "white" on Tanner R.T.3939. Tanner reports that in Tanzania the entire plants are pounded up while green and applied externally to treat pains in the stomach. He also reports the vernacular name, "nkamachuma". Greenway & Vesey-Fitzgerald (1972) list the variety from Lake Manyara National Park, citing Greenway 11119.

The Leach 11303, distributed as this variety, actually is P. meyeri Jaub & Spach.

Additional citations: TANZANIA: Tanga: Drummond & Hemsley 2413 (B); Schlieben 3231 (Mu—isotype); Tanner R.T.3939 (Ba, N). ZAMBIA: Fries, Nordlindh, & Weimarck 3990 (Mu).

PRIVA CURTISIAE Kobuski, Ann. Mo. Bot. Gard. 13: 7, pl. 2. 1926.

Additional synonymy: Priva curtisii Kobuski ex Mold., Fifth Summ. 2: 613, in syn. 1971.

Additional bibliography: Kobuski, Ann. Mo. Bot. Gard. 13: 6—8, 23, & 28—[31], pl. 2 & 3, fig. 1—6. 1926; Wangerin, Justs Bot. Jahresber. 54 (1): 1170. 1932; Fedde & Schust., Justs Bot. Jahresber. 54 (2): 747. 1934; Mold., Geogr. Distrib. Avicenn. 30 & 31. 1939; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14358. 1958; Mold., Phytologia 14: 394. 1967; Mold., Résumé Suppl. 15: 22. 1967; Glover, Stewart, Fumerton, Marindany, & Anderson, Gloss. Botan.-Kipsig. Names 160, 217, 250, & 260. 1969; Mold., Fifth Summ. 1: 238 & 241 (1971) and 2: 612, 613, & 905. 1971.

Illustrations: Kobuski, Ann. Mo. Bot. Gard. 13: [29] & [31], pl. 2 & 3, fig. 1—6. 1926.

Recent collectors describe this species as an erect perennial herb, to 4 feet tall, or with numerous, prostrate or ascending, branching, rough stems to 18 inches long, the sap colorless, the flowers small, odorless, in open racemes terminating the stems, and

have found it growing in grassland, among rocks on hillsides, and "locally common with Barleria, Striga, Indigofera, Cassia, Pentanisia ouragyna, Polygala, Harpachne schimperii, and Pennisetum stramineum in Acacia drepanalobium — A. nilotica ssp. subulata — A. seyal — Ormocarpum — Pappea capensis — Carissa edulis thickets", at altitudes of 1250—1780 m., flowering in February, March, and May, fruiting in March. The corollas are said to have been "violet-red" on Strid 4089, "magenta-pink" on Greenway & Napper 13558, and "white" on Tanner 1269.

The vernacular names, "biriwob-sot", "ikubya", "maseiwob-sot" [masei, to wipe], "mosibit-ab-tiriita" [a name that really belongs to Leonotis and Leucas], and "pirir-wob-sot" [from birire, rubbing or crushing in the hands, and sot, a gourd]. The leaves are crushed in the hands to make a seal over sewing on milk gourds. The juice is squeezed into the eyes as a remedy for ophthalmia, and the pounded leaves are added to flour to make a poultice for sores. The plant is also used to clean out milk gourds.

Additional citations: TANZANIA: Tanga: Tanner 1269 (N). KENYA: Greenway & Napper 13558 (Mu); Strid 4089 (Go).

PRIVA DOMINGENSIS Urb., Symb. Antill. 7: 354. 1913.

Additional bibliography: Fedde & Schust., Justs Bot. Jahresber. 40 (2): 335. 1915; Kobuski, Ann. Mo. Bot. Gard. 13: 2, 6, 8—9, & 23. 1926; Mold., Geogr. Distrib. Avicenn. 7. 1939; Mold., Phytologia 14: 348—349. 1967; Mold., Fifth Summ. 1: 103 (1971) and 2: 905. 1971.

Recent collectors describe this species as herbaceous, prostrate or decumbent to erect, 25—40 cm. tall, branched from the base, or a "low shrub" (Liogier 13641a), the foliage very aromatic, and have found it growing in limestone soil in open places and among thickets and rocks on limestone hillsides, at altitudes of 50—500 m., flowering in February, March, May, June, and November, fruiting in February and June. Liogier speaks of it as "common" in some areas, "rare" in others.

The corollas are said to have been "blue" on Liogier 13642 & 15198, "reddish" on Liogier 11588, "purple" on Liogier 17041 and Liogier & Liogier 22556, and "white" on Liogier 13641a.

Additional citations: HISPANIOLA: Dominican Republic: Ekman H. 13737 (Ld); A. Liogier 11588 (N), 13641a (N, Z), 13642 (Ac, N), 15198 (Ac, N, W—2576806A), 17041 (Ld, N, W—2801657); Liogier & Liogier 22556 (N).

PRIVA GRANDIFLORA (Ort.) Mold., Phytologia 2: 142. 1946.

Additional & emended bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 495. 1858; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 628. 1894; Solered., Syst. Anat. Dicot. 714. 1899; D. H. Scott in Solered., Syst. Anat. Dicot. [transl. Boodle & Fritsch] 1: 631. 1908; Kobuski, Ann. Mo. Bot. Gard. 13: 2—4, 7, 17—18, & 32—[35], pl. 4 & 5, fig. 13 & 22. 1926; Wangerin, Justs Bot.

Jahresber. 54 (1): 1170. 1932; Fedde & Schust., Justs Bot. Jahresber. 54 (2): 747. 1934; Mold., Geogr. Distrib. Avicen. 14 & 39. 1939; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 2: 628 (1946) and imp. 3, 2: 628. 1960; Mold., Phytologia 14: 349—350. 1967; Mold., Résumé Suppl. 15: 22. 1967; Bolkh., Grif, Matvej., & Zakhar., Chromos. Num. Flow. Pl., imp. 1, 717. 1969; Sanchez-Sanchez, Fl. Val. Mex., ed. 1, 326 & 327, fig. 251 C. 1969; El-Gazzar & Wats., New Phytol. 69: 483 & 485. 1970; Mold., Fifth Summ. 1: 73 & 368 (1971) and 2: 613, 614, 644, 672, 693, 703, & 905. 1971; Bolkh., Grif, Matvej., & Zakhar., Chromos. Num. Flow. Pl., imp. 2, 717. 1972; Mold., Phytologia 22: 458. 1972; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Mold., Phytologia 29: 43 (1974) and 36: 122. 1977.

Illustrations: Kobuski, Ann. Mo. Bot. Gard. 13: [33] & [35], pl. 4 & 5, fig. 13 & 22. 1926; Sanchez Sanchez, Fl. Val. Mex., ed. 1, fig. 251 C. 1969.

Recent collectors describe this species as a scarce or rare caespitose perennial, growing in clumps, "semi-rastrera" or "rastrera", and have encountered it on pine savannas, in secondary matorral, "volcanic very thin soil in oak and sparse pine forests", "among scrub junipers in rocky alluvium of rocky plateau", in "mesquite-nopal savannas on gentle slopes of reddish sandy loam", on open volcanic rock slopes of mesas, on gravel roadbase, in "pastizal of Bouteloua radicata, Hilaria cenchroides, Muhlenbergia rigida, and Lycurus phlaeoides", in "pastizal" and "pastizal ladera", on "valley floor with mixed oak and thorn", on "slopes with igneous rock and pastizal vegetation", and "in open hilly grasslands with gravel base", as well as in "ladera andesítica con vegetación de zacatal perturbado", at altitudes of 1980—2830 m., flowering from July to September, in fruit in July and August. It is reported to be "common" in grassland below the limit of oaks in Jalisco, Mexico. Derman (1936), Noack (1937), and Bolkhovskikh & his associates (1969) all report the chromosome number as 10.

The corollas are said to have been "pink" on Correll & Johnston 20062, "purple" on Rzedowski 301, 1799, & 22899, "light-purple" on Rzedowski 22962, "pale-violet" on Flyr 1529, "pale-lavender" on McVaugh 17143, and "pale-bluish, nearly white" on McVaugh 18278.

Sanchez (1969) keeps P. grandiflora and P. rhinanthifolia (Mart. & Gal.) B. L. Robinson as two separate and valid species, listing "pegarropa" as a vernacular name for the latter in Mexico. I feel convinced that the two are conspecific.

Material of P. grandiflora has been misidentified and distributed in some herbaria as Bouchea sp. and Verbena sp. and even as Dyschoriste sp. in the Acanthaceae.

Additional citations: MEXICO: Aguascalientes: R. McVaugh 18278 (Au—235353, Ld, N). Chihuahua: Ellis, Dunn, & Wallace 918 (Ld); Stuessy 1031 (Au—257494, Ld). Durango: Correll & Johnston 20062 (Ld); Flyr 1529 (Au); Johnson & Johnson 1828 (Ws);

M. C. Johnston 2664 (Ln—196289); LeDoux & Dunn 1909 (Ld). Fed-  
 eral District: Cruz Cisneros 1729 (Mi); Lyonnnet 596 (Mi); J. Rze-  
dowski 301 (Ip), 1799 (Au—241276, Ip). Jalisco: R. McVaugh 17143  
 (Mi); A. R. Moldenke 1821 (Ld). México: Bayona 38 (Au—303161,  
 Mi, N, N); Cruz Cisneros 786 (Wa); J. Rzedowski 15717 (Ip), 16803  
 (Ip), 22899 (Ip), 22962 (Ip, Mi), 23974 (Ip), 28260 (Mi). Micho-  
 acán: Detling 8485 (W—2669366); Hinton 13204 (Au—121523, Se—  
 187211); A. R. Moldenke 1803 (Ac).

PRIVA HUBERTI Mold., Phytologia 3: 423—424. 1951.

Additional bibliography: Mold., Phytologia 14: 350. 1967; Mold.,  
 Fifth Summ. 1: 262 (1971) and 2: 905. 1971.

PRIVA LACINIATA Mold., Feddes Repert. Spec. Nov. 41: 35—36. 1936.

Additional bibliography: Mold., Feddes Repert. Spec. Nov. 41:  
 35—36. 1936; Mold., Geogr. Distrib. Avicen. 12. 1939; Mold., Known  
 Geogr. Distrib. Verbenac., ed. 1, 30 & 99 (1942) and ed. 2, 58.  
 1949; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14358. 1958;  
 Mold., Phytologia 14: 350. 1967; Mold., Fifth Summ. 1: 113 (1971)  
 and 2: 905. 1971.

PRIVA LAPPULACEA (L.) Pers., Syn. Fl. 2: 139. 1806.

Additional & emended synonymy: Priva lappulaceae Pers. apud  
 Steud., Nom. Bot. Phan., ed. 1, 657. 1821. Priva lappulaceae Ko-  
 buski, Ann. Mo. Bot. Gard. 13: 4 sphalm. 1926. Tamonea lappulaceae  
 Lam. apud Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl.  
 Venez.] 604 in syn. 1927. Zappania lappulaceae Lam. apud Knuth,  
 Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 604 in syn.  
 1927. Verbena lappulaceae Grieve & Leyel, Modern Herb., imp. 1, 2:  
 832 sphalm. 1931. Priva lappulaceae (L.) Pers. ex Mold., Résumé  
 Suppl. 16: 25 in syn. 1968. Zapania lappulaceae Lam. ex Mold., Fifth  
 Summ. 2: 736 in syn. 1971. Priva lappulaceae f. lappulaceae [(L.)  
 Pers.] ex Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60:  
 78 & 147. 1973. Priva lappulaceae f. lappulaceae [Moldenke] ex Mold.,  
 Phytologia 28: 462 in syn. 1974. Priva lappulaceae (L.) Pers. ex  
 Mold., Phytologia 28: 462 in syn. 1974. Priva lappula Andrews ex  
 Mold., Phytologia 36: 45 in syn. 1977.

Additional & emended bibliography: Sloane, Voy. Jamaic. Nat.  
 Hist. 1: 174, pl. 110, fig. 1. 1707; L., Sp. Pl., ed. 1, imp. 1, 1:  
 19. 1753; P. Browne in Sloane, Civil Nat. Hist. Jamaic., ed. 1,  
 116—117. 1755; L., Syst. Nat., ed. 10, 2: 852. 1759; L., Sp. Pl.,  
 ed. 2, 28. 1762; Crantz, Inst. Rei Herb. 1: 572. 1766; [Retz.],  
 Nom. Bot. 11. 1772; Jacq., Select. Stirp. Amer. Hist. 8. 1788; P.  
 Browne in Sloane, Civil Nat. Hist. Jamaic., ed. 2, 116—117. 1789;  
 J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 1, 2: 41 (1789) and  
 ed. 13, imp. 2, 2: 41. 1796; Raeusch., Nom. Bot., ed. 3, 3. 1797;  
 Willd., Enum. Pl. Hort. Berol. 2: 633—634. 1809; Stokes, Bot. Mat.  
 Med. 1: 39—40. 1812; H.B.K., Nov. Gen. Sp. Pl., ed. folio, 2: 225  
 (1817) and ed. quarto, 2: 278. 1818; Pers., Sp. Pl. 3: 348. 1819;

Sweet, Hort. Brit., ed. 1, 1: 324 (1826) and ed. 2, 418. 1830; G. Don in Loud., Hort. Brit., ed. 1, 246 (1830) and ed. 2, 246. 1832; Loud., Hort. Brit., ed. 2, 552. 1832; G. Don in Loud., Hort. Brit., ed. 3, 246. 1839; Sweet, Hort. Brit., ed. 3, 552. 1839; Voigt, Hort. Suburb. Calc. 473. 1845; Schau in A. DC., Prodr. 11: 529, 534, & 556. 1847; Schau., Linnaea 20: [476]. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 367, 368, 495, & 507. 1858; A. Wood, Am. Bot. Flor., ed. 1, imp. 1, 235 (1870), ed. 1, imp. 2, 235 (1871), ed. 1, imp. 3, 235 (1872), ed. 1, imp. 4, 235 (1873), ed. 1, imp. 5, 235 (1874), and ed. 1, imp. 6, 235. 1875; A. Gray, Syn. Fl. N. Am., ed. 1, 2 (1): 334 (1878) and ed. 2, 2 (1): 334. 1886; O. R. Willis in A. Wood, Am. Bot. Flor., ed. 2, 235. 1889; T. S. Brandeg., Proc. Calif. Acad. Sci., ser. 2, 3: 164. 1893; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 310 (1893) and imp. 1, 2: 628. 1894; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Ramirez Goyena, Fl. Nicarag. 2: 557. 1911; Loes., Verh. Bot. Ver. Brand. 53: 80. 1912; Arthur, Mycologia 14: 18. 1922; Seaver, Mycologia 17: 9. 1925; Kobuski, Ann. Mo. Bot. Gard. 13: 1, 2, 4, 11—16, 24, & 32—[35], pl. 4 & 5, fig. 10 & 19. 1926; Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 604—605. 1927; Kern, Mycologia 20: 72. 1928; Grieve & Leyel, Modern Herb., imp. 1, 2: 832. 1931; Roys, Ethno-bot. Maya [Tulane Univ. Midd. Am. Res. Ser. Publ. 2:] 290 & 324. 1931; Wangerin, Justs Bot. Jahresber. 54 (1): 1170. 1932; Mold., Geogr. Distrib. Avicen. 3—12, 14—24, 26, 28, 33, & 39. 1939; Yuncker, Field Mus. Publ. Bot. 9: 330. 1940; Darlington & Janaki Ammal, Chromos. Atlas 270. 1945; Savage, Cat. Linn. Herb. Lond. 4. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 310 (1946) and imp. 2, 2: 628. 1946; Hill & Salisbury, Ind. Kew Suppl. 10: 33. 1947; Metcalfe & Chalk, Anat. Dicot. 1040. 1950; Arnoldo, Zakfl. 125, 126, 160, & 167, pl. 62, fig. 136. 1954; Darlington & Wylie, Chromos. Atlas, ed. 1, 323. 1956; Vélez, Herb. Angiosp. Lesser Ant. 117. 1957; R. C. Foster, Contrib. Gray Herb. 184: 170. 1958; Grieve & Leyel, Modern Herb., imp. 2, 2: 832. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 310 (1960) and imp. 3, 2: 628. 1960; Macbr., Field Mus. Publ. Bot. 13 (5): 660. 1960; Darlington & Wylie, Chromos. Atlas, imp. 2, 323. 1961; V. E. Graham, Trop. Wild Flow. 111 & 112. 1963; Hepper in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 2: 434 & 435. 1963; Robertson & Gooding, Bot. Caribb. 156 & 233, fig. 77 D. 1963; Backer & Bakh., Fl. Java 2: 599. 1965; Castañeda, Fl. Cent. Boliv. 328—329, fig. 143. 1965; Gooding, Loveless, & Proctor, Fl. Barbados 362—363. 1965; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 7, 921. 1966; Hirata, Host Range Geogr. Distrib. Powd. Mild. 276. 1966; D'Arcy, Rhodora 69: 439. 1967; Grieve, Modern Herb. 832. 1967; Hocking, Excerpt. Bot. A.12: 425. 1967; Mold., Résumé Suppl. 15: 3, 4, 16, & 22. 1967; Mold., Phytologia 14: 394 (1967) and 17: 114. 1968; Burlage, Ind. Pl. Mex. 183, 202, 235, & 241. 1968; Mold., Biol. Abstr. 49: 4199 & 11291. 1968; Mold., Résumé Suppl. 16: 2—5, 25, & 28 (1968) and 17: [1] & 2. 1968; J. A. Steyerma., Act. Bot. Venez. 3: 156. 1968; Barriga-Bonilla, Hernández-Camacho, Jaramillo-T., Jaramillo-Mejía, Mora-Osejo, Pinto-

Escobar, & Ruiz-Carranza, Isla San Andres 59. 1959; Bolkh., Grif, Matvej., & Jakhar., Chromos. Numb. Flow. Pl., imp. 1, 716. 1969; Farnsworth, Blomster, Quimby, & Schermerh., Lynn Index 6: 262. 1969; M. Martinez, Pl. Med. Mex., ed. 5, 502. 1969; A. L. Mold., Phytologia 18: 120 & 125. 1969; Rickett, Wild Flow. U. S. 3 (2): 365—366. 1969; G. W. Thomas, Tex. Pl. Ecol. Summ. 77. 1969; Dennis, Kew Bull. Addit. Ser. 3: 177. 1970; Duke, Econ. Bot. 24: 363. 1970; Gibson, Fieldiana Bot. 24 (9): 219—221, fig. 42. 1970; Hocking, Excerpt. Bot. A.15: 422. 1970; Mold. in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. 6: ] 1337, 18 08, 1811, 1815, 1830, 1846, 1859, & 1876. 1970; Oberwinkler, Pterid. Sperm. Venez. 4 & 78. 1970; Dwyer, Raymondiana 4: 71. 1971; Long & Lakela, Fl. Trop. Fla., ed. 1, 740 & 953. 1971; Mold., Fifth Summ. 1: 30, 56, 73, 78, 80, 82, 84—86, 88, 91—93, 97, 99, 101, 103, 105—107, 109, 110, 112, 113, 119, 126, 130, 132, 134, 137, 138, 143, 169, 183, 220, 327, 368, 392, 399, & 403 (1971) and 2: 612—614, 618, 619, 639, 643, 669, 674, 679, 682, 685, 700, 708, 736, & 905—906. 1971; Mold. in Wiggins & Porter, Fl. Galáp. Isls. 497—[499], fig. 131 a & b. 1971; Wiggins & Porter, Fl. Galáp. Isls. 993, 997, & 998. 1971; C. D. Adams, Flow. Pl. Jamaic. 632, 792, 793, 796, 836, & 846. 1972; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Rendueles, Rodríguez Graquitená, Roquel Casabella, & Schreiber, Die Kulturpfl. 19: 422. 1972; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 8, 945. 1973; Farnsworth, Pharmacog. Titles 8 (8): xvii. 1973; Mold., Phytologia 25: 228. 1973; Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 77—81 & 147, fig. 6. 1973; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 302, fig. 130 A. 1974; Bolkh., Grif, Matvej., & Zakhar., Chromos. Numb. Flow. Pl., imp. 2, 716. 1974; Howes, Dict. Useful Fl. 269. 1974; Mold., Phytologia 28: 432—434, 436, & 462 (1974) and 29: 56. 1974; Molina R., Ceiba 18: 66. 1974; Percival, Biotropica 6: 110 & 111. 1974; Troncoso, Darwiniana 18: 360, 408, & 411. 1974; Balgooy, Pacif. Fl. Areas 3: 245. 1975; Garcia, MacBryde, Molina, & Herrera-MacBryde, Malez. Preval. Cent. Am. 143 & 159. 1975; López-Palacios, Revist. Fac. Farm. Univ. Andes 15: 74. 1975; Mold., Phytologia 31: 379—381, 383, 393, 400, 407, & 410. 1975; Molina R., Ceiba 19: 96. 1975; S. R. Hill, Rhodora 78: 33. 1976; Long & Lakela, Fl. Trop. Fla., ed. 2, 740, 953, & 961. 1976; Mold., Phytologia 34: 256. 1976; Soukup, Biota 11: 16. 1976; López-Palacios, Fl. Venez. Verb. 20, 503—511, 646, 647, 652, & 654. 1977; Mold., Phytologia 36: 30, 33, & 45. 1977; Powell, Econ. Bot. 31: 424. 1977; Dodson & Gentry, Selbyana 4: 578, 579, 605, & 624, pl. 271 D. 1977; Liogier, Moscosoa 1: 38. 1978; Mold., Phytologia 43: 330 & 333. 1979.

Additional & emended illustrations: Sloane, Voy. Jamaic. Nat. Hist. 1: 174, pl. 10, fig. 1. 1707; Kobuski, Ann. Mo. Bot. Gard. 13: [33] 7 [35], pl. 4 & 5, fig. 10 & 19. 1926; Arnoldo, Zakfl. pl. 62, fig. 136. 1954; V. E. Graham, Trop. Wild Flow. 111. 1963; Robertson & Gooding, Bot. Caribb. 156, fig. 77 D. 1963; Castañeda, Fl. Cent. Boliv. 329, fig. 143. 1965; Gibson, Fieldi-

ana Bot. 24 (9): 220, fig. 42. 1970; Mold. in Wiggins & Porter, Fl. Galáp. Isl. [499], fig. 131 a & b. 1971; Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 79, fig. 6. 1973; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 302, fig. 130 A. 1974; Garcia, MacBryde, Molina, & Herrera-MacBryde, Malez. Preval. Cent. Am. 143 (in color). 1975; Batson, Gen. East. Fl. 147. 1977; López-Palacios, Fl. Venez. Verb. [506], fig. 120. 1977; Dodson & Gentry, Selbyana 4: 579, pl. 271 D. 1978.

Recent collectors describe this plant as a soft, weedy, annual herb, 0.2--1.5 m. tall, spreading from the base, erect or decumbent, the stems weak, square, purple at the areas of branching, the nodes constricted, the leaves "coarse, due to small pale-brown hairs which feel 'sandy'", the bracts olive-green, the pedicels and calyx green and hairy, the flower-buds blue, the flowers odorless, and the fruit green, deep-green when immature. Ton calls it a "shrub 4 feet tall" in Chiapas [Mexico], but surely this is erroneous -- perhaps the plant was leaning against a shrub for support, as it often does.

The corollas are said to have been "blue" on Calderón 1044, Duke 13621, Liogier & Liogier 26451, and Tyson & al. 4825 and are also so described by López-Palacios (1975), "light-blue" on López-Palacios 4295, "pale-blue" on Asplund 15373, López-Palacios 1850, and Woodson & al. 1454, and are also so described by Graham (1963) and Grieve (1967), "pale-bluish" on Fosberg 54129, "blue to pale-purple" on Maas & Maas 212, "light-purple 5 P 7/7" on Schunke 4955, "purple" on Belshaw 3208, Kerr & Hagee 1108, and Rzedowski 24403, "the limb purplish, tube whitish" on Howell 8875, "white, edged with purple at the tips" on White & White 194, "petals pale-purple, tube white" on Woytkowski 35063, "violet" on Krizman s.n., "pale-violet" on Molina 263 and Proctor 16932, "lilac" on Gandara & Dorantes 44, López-Palacios 3851, Molina 27478, and Ventura 2630 & 3840, "pale-lilac" on Chambers 2783 and López-Palacios 3933, "white-lilac" on Contreras 3792, "lavender" on Fosberg 29002, Moore 2934, and Woodson & Schery 835, "pale pinkish-lavender" on McVaugh 15827, "pale-lavender" on Fosberg 29059 and Gentry 8521, and are also so described by Yuncker (1940), "lavender-pink" on Webster & Webster 13192, "petals have lavender margin and white" on King 328, "pink" on Wedel 1495, "pinkish" on Molina 26256, "lobes pink, throat white" on Dodson 5633, "pale-rose" on Molina 14272 & 15812, "mauve" on Adams 5429, and "white edged with lavender" on Howell 8606. Specimens with completely white corollas are here regarded as f. albiflora Mold.

Recent collectors have found P. lappulacea growing in fertile soil and in sand, in shady places, fields, moist thickets, muddy places, caryons, and clearings in ramoral covering ancient temple ruins, on roadside banks and shoulders, wooded slopes, and hill-sides, in woods, rainforests, steep heavily wooded moist ravines, open grazed areas, cultivated fields, matorral, moist habitats in

general, open waste land, and secondary forests, "along roadsides in the dry montane forest zone", "on weedy banks and flats at the edge of riverbanks above floodwater line", in open areas with vegetation mainly of leguminous shrubs and cacti, and "just beyond the reach of salt-spray along seabeaches, often in open sunlight", at altitudes of sealevel to 1320 meters, flowering and fruiting in every month of the year.

Harmon & Fuentes found it in weedy fields and along streamsides in the tropical rainforest zone of Guatemala, while Molina assert it to be "common in semi-humid tropical forests" there. Tyson & Blum refer to it as a "lawn weed" in the Panama Canal Zone. In Honduras it is said by Molina to be an "abundant weed in crops" and a "frequent" or "common" weed in semi-humid tropical woods; also common on Roatan island. Duke and his associates call it a "weed" in Panama. Chambers refers to it as "a roadside weed" on Dominica island, where the Websters also found it to be "common". D'Arcy (1967) reports it "a common weed" on Tortola; Andrews regards it a "roadside weed" in the Barbados and encountered it "in grassy open spaces" on Tobago; Fosberg reports it common on St. Croix, while Proctor describes it as "a common weedy herb" on St. Lucia.

In Veracruz, Mexico, Ventura refers to it as "scarce" in some localities, "abundant" in others, while Calderón found it "very abundant". Woytkowski reports it "common" in San Martín, Peru, and Fosberg found it to be common in Loreto but a "rare weed in burned fields" elsewhere in that country. Sparry encountered it in secondary monsoon forests, among open secondary vegetation, and in cultivated land in Ecuador. King reports it "not common along gravelly roadsides", while Kerr & Hagee aver "commonly found in grass-shrub association on riverbottoms and limestone hills".

Adams (1972) states that in Jamaica P. lappulacea is "A common weed of cultivations, roadsides and waste places" at altitudes of 30 to 1750 feet, flowering and fruiting all through the year, native to the subtropics and tropics of the Americas, "recently naturalized in West Africa and Asia". Woodson and his associates describe it as an "herb, 1.5—2 m." tall — this is the only reference to its attaining a height of over 1.5 m. Wedel asserts on the label of his no. 413 "tree about 3 ft. with small green seeds", but this is obviously erroneous! Gooding & Loveless (1965) assert that it is a "common weed" in the Barbados, citing Herb. Barb. Mus. 230; Byrne found it common in abandoned gardens in the Bahamas. Gandara & Dorantes found it in "selva mediana subperennifolia secundaria, suelo lecho calizo arcilloso con humus" in Mexico. In Tabasco González & Pérez found it in secondary association vegetation with Canna indica, Malachra fasciata, Cochorus hirtus, Heliconia latispatha, and Malvaviscus arboreus in dark-gray sandy soil "con grietas en la época seca". In Morelos Crespo encountered it in deciduous tropical forests in canyon bottoms. Rzedowski found it on "ladera caliza con vegetación de bosque tropical subdeciduo de Brosimum y Celtis monoica". Kimber encountered it on damp but well-drained river-terraces on Dominica,



while on Martinique he found it on "savannas improved by the planting of Sporobolus indicus". Dinsmore refers to it as a pioneer species on paths, especially in some shade, throughout the island of Little Tobago.

Backer & Bakhuizen van den Brink (1965) report Priva lappulacea naturalized near Bantur, Java. They also note that "In detached branches the corolla is very easily shed (traumatocory); when the fruit is mature the calyx (with the enclosed fruit) comes off from the persistent pedicel and easily clings to passing objects by the aid of the upcurved bristles".

Yuncker (1940) records P. lappulacea from Atlántida, Honduras, while Molina (1974) found it in Comayagua. Hill (1976) reports it from Long Island, Bahamas, citing Hill 2150. Sloane (1707) reports it from Jamaica and Arnoldo (1954) from Curaçao. Hepper (1963) lists it from Ghana, citing Hall 1891. Sweet (1826) says that it was introduced into cultivation in England from "S. Am." in 1822.

Alain (1974) gives its distribution as "terr. yermos" in all of Cuba, the Isle of Pines, Florida, the Antilles, continental tropical America, and Java. Gibson (1970) says that "Throughout most of the tierra caliente of Central America this is a common weed; often abundant about dwellings. The fruiting calyxes adhere to clothing and even to the feathers of birds by the abundant small uncinat hairs". Castañeda (1965) tells us that "Se encuentra desde Méjico, por todas Las Antillas, hasta Perú y Bolivia. Los animales la comen. Se encuentra dentro de los cultivos o en lugares soleados de suelo húmedo". Robertson & Gooding (1963) repeat that the species is animal dispersed. Runyon reports it occasional in alluvial soil of open woodland and old resaca banks, as well as at the edges of thickets, in south-eastern Texas.

Darlington & Wylie (1956) and Bolkhovskikh and his associates (1969) report the chromosome number for the species as  $x = 6$ ; Patermann (1938) reports it as  $2n = 12$ .

Among the recently reported common and vernacular names for P. lappulacea are "amor seco" [applied also to Desmodium spp.], "bristly-fruited priva", "burr-vervain", "burry vervain", "cadillito", "cadillo", "cadillo de bola", "cadillo de bolsa", "cadillo de bolsas", "cadillo pegajosa", "clammy bur", "codillo de bolsa", "coyolillo de raton", "fasten-'pon-coat", "favolito", "green button", "ismokotsiyat", "mozote", "mozote de bolsita", "mozotillo", "pegajosa", "pegapega", "pega-pega", "rama pegosa", "sadamsai", "secalotodo", "styptic bur", "tsayuntsay", "tzayentzal", "tzayuntzay" [=that which clings closely; also applied to Mentzelia asperata], "velvet bur", "velvetbur", "velvet-bur", "velvet-burr", "verbena", and "vuku-vuku-toriman".

Seaver (1925) reports the fungus, Cincinnatiobolus sp., attacking P. lappulacea on St. Croix island; Hirata (1966) lists the powdery mildews, Oidium verbenae and O. sp., on it in Puerto Rico and Dominica; Kern (1928) lists Puccinia lantanae Farl. on it in the Dominican Republic, citing Chardon 378 and Kern 36 & 65.

Dennis (1970) and Arthur (1922) also report P. lappulacea as host for Puccinia lantanae in Trinidad, Arthur citing Seaver 2955, 2970, & 3397.

Worth recording here is Linnaeus' original (1753) description of the species: "VERBENA diandra, calycibus subrotundis erectiusculis, seminibus echinatis", citing as synonyms Sloane's "Scorodonia floribus spicatis purpurascens pentapetaloidibus" and Houston's Blairia. He notes "Habitat in Jamaica". Stokes (1812) adds that the original collection was "gathered by Broughton in Jamaica". In the Linnean Herbarium, London, according to Savage (1945) sheets 5 and 6 under genus 35 VERBENA are inscribed "lappulacea" in Linnaeus' own handwriting, "Verbena" supplied on sheet 5 by Solander. It was collected by Browne [or, at least, transmitted to Linnaeus by him], while sheet number 6 was collected [or transmitted] by Rolander according to Linnaeus in his own handwriting. Sheet 6 is pinned to sheet 5. I have personally examined both these specimens and can confirm the above statements.

As to economic uses, Kelly reports that the plant is used by the Totonac Amerinds in Veracruz, while Pennington reports the leaves used as a poultice for headaches in Sonora, Mexico. Duke (1970) tells us that the plant is used to treat whooping cough by the Chocó Amerinds. Grieve (1967) asserts that it "is a vulnerary sub-astringent, being used even for very severe bleeding wounds on men and cattle, especially in Jamaica". Metcalfe & Chalk (1950) report the leaves used to make a tea. Martinez (1969) asserts that in Mexico the plant is used to treat leucorrhoea; Airy Shaw (1966) also avers that the leaves are used to make a tea; Duke says that in Panama they are "used medicinally". Sloane (1707) reports that in Jamaica "The juice is counted a good vulnerary, healing green Wounds, often application giving some smarting pains". Browne (1755) adds that "This plant is a fine vulnerary and subastringent, and is commonly applied to bleeding wounds in either men or cattle by the inhabitants of the country parts of Jamaica; it is thought to be so powerful a stiptic or astringent as to stop the hemorrhage even when some of the more considerable arteries are cut; and may be deservedly considered as an excellent application in all manner of sores where the habit is relaxed."

Dodson & Gentry (1978) cite Dodson 5633 from Los Ríos, Ecuador; Loesener (1912) cites Seler 2063 from Chiapas, Mexico; Knuth (1927) cites Moritz 126 and Vargas s.n. from Federal District, Venezuela, and Ernst s.n. and Miller & Johnston 96 from Margarita island. Macbride (1960) cites from Peru: Cajamarca: Raimondi s.n. Huánuco: Asplund 12096. Junín: Macbride 5296. Lima: Esposito s.n. Loreto: Klug 1238; Ll. Williams 291, 397, & 4428. Tumbes: Weberbauer 7737. He comments that this is "A weedy plant decumbent-ascending, to even a meter tall, doubtless growing in other than the [above-mentioned]....departments....[also in] Most of warmer America."

Steyermark (1968) cites his no. 88186 from Venezuela; Dwyer cites Woytkowski 5618 from Amazonas, Peru; Adams (1972) cites Adams 5429, Harris 6785, and Proctor 23897 from Jamaica; Liogier (1978)

cites Liogier 26451 from the Dominican Republic. López-Palacios (1977) cites the following collections from Venezuela: Anzoátegui: Porter 5156. Aragua: Badillo 4559; Benítez 433; Fendler 912; Fernández 315, 500; Ferrari 405; Moreno E.3; Trujillo 4873, 4976; Vogl 390. Barinas: Breteler 4440. Bolívar: Cardona 603; Sprague s.n.; Steyermark 88186. Carabobo: Asplund 15133; Engredt 17; Ll. Williams 11106. Delta Amacuro: Ruiz-Terán & López-Palacios 9733; Rusby & Squires 306. Falcón: Tamayo 1953. Federal District: Fernández 23; Funck 53 in part; Moritz 126; Vargas s.n. [72?]. Lara: Saer 580; R. T. Smith V.4283; Steyermark & Carreño 108774. Mérida: López-Palacios & Bautista 3384; Read 983; Ruiz-Terán 876. Monagas: Moritz 1902; Trujillo 9463. Portuguesa: Trujillo 3932. Sucre: Broadway 67; Funck 53 in part; Ruiz-Terán & López-Palacios 9896. Trujillo: Reed 1077. Yaracuy: Giné 2048. Zulia: Lasser 2560; Lescarbours 38; López-Palacios 1803, 1850; Mocquerys 909; Steyermark 100145. Margarita Island: Miller & Johnston 96.

Material of P. lappulacea has often been misidentified and distributed in herbaria as P. aspera H.B.K., Verbena sp., Phryma sp. (Phrymaceae), and "Labiatae". On the other hand, the Breteler 4380, Castañeda 9279, Correll 43873, Croat 23802 & 23861, Hinton 4360, 10366, 13941, & 13975, R. M. King 741, Liesner 83, Troublefield & Rowell 2808, Tucker 501, Ventura 5801, Wedel 2834, and Wilbur & al. 7571 are P. lappulacea f. albiflora Mold., Henrickson 13264, 13291, & 13377, Lundell & Lundell 12382, and Reeves R.6288 are P. mexicana (L.) Pers., Liogier 17505 is Bouchea prismatica (L.) Kuntze, Castañeda 10612 is Salvia occidentalis Sw. (Lamiaceae), Gutiérrez R.287 is Teucrium inflatum Sw. (Lamiaceae), and Holguín s.n. [26/VI/1965], Rzedowski 19977, and Santos 2895 are Teucrium vesicarium Mill. (Lamiaceae).

Additional & emended citations: FLORIDA: Key Largo: J. A. Churchill s.n. [5 September 1970] (Ln--229854). County undetermined: Herb. Le Roy s.n. [s. Fla.] (Ms--30930). TEXAS: Cameron Co.: R. Ruyon 562 (Au--269663), 4858 (Au--269657), 4884 (Au--269640). Hidalgo Co.: Fleetwood 8042 (Au--234388). MEXICO: Chiapas: Breedlove 11793 (Ld); Laughlin 1326 (Mi, W--2581038); Thorne & Lathrop 40554 (Ld); Ton 2992 (N, Ws), 3782 (Ws). Colima: R. McVaugh 15827 (Mi). Guerrero: Hinton 11545 (Se--187254), 14391 (Se--187207). Hidalgo: H. E. Moore 2934 (Ba). Michoacán: Hinton 13062 (Se--187253), 16120 (Ld). Morelos: Flores Crespo 8 (Ac, Ws). Oaxaca: R. M. King 328 (Mi). San Luis Potosí: González Quintero 132 (Ac); Kerr & Hagee 1108 (Mi); J. Rzedowski 24403 (Ip, Ws). Sonora: Krizman s.n. [30 August 1968] (N); Pennington 266 (Au--254319). Tabasco: González L. & Pérez J. 4252 (Ws). Tamaulipas: Richardson 74 (Ld). Veracruz: Chavelas P., Esparza,

& Acevas ESS.2472 (Ip); Gandara & Dorantes 44 (N); Gómez-Pompa 4608 (G); I. Kelly 311 (Ba); Martínez Calderón 1044 [Rec. Inf. D001793] (Mi); Moldenke & Moldenke 2206 (Ac); Ventura A.2630 (Au-303089, Mi, N), 3840 (Au-303885, Mi); Vera Santos 221 (Au-263163). Yucatán: Degener & Degener 26781 (W-2298690). GUATEMALA: Baja Verapaz: Harmon 4252 (N). El Petén: Contreras 3792 (Au-278572, Ld, Ld); Cox & Guzmán 2941 (Oa); Harmon & Fuentes 2103 (N); C. L. Lundell 15343 (Au-228030); Molina R. 15812 (N, W-2566451). Guatemala: Harmon & Dwyer 3060 (W-2786618). Zacapa: Kellerman 7772 (W-2441953). BELIZE: A. Gentry 8521 (N). HONDURAS: Choluteca: Molina R. 23228 (N). Comayagua: Molina R. 14272 (N). Copán: Molina R. 26256 (N, W-2633215); Poole & Watson 1049 (Ld, Ld), 1132 (Ld). Distrito Central: Barkley & Nelson 39483 (Ac); Boghdan & Barkley 39404 (Ld). Morazán: Molina R. 263 (Ba), 27478 (N, W-2735873). BAY ISLANDS: Roatan: Molina R. 20812 (W-2751986). NICARAGUA: Managua: F. C. Seymour 2338 (Ld, N). COSTA RICA: Puntarenas: Burger & Liesner 6525 (N). PANAMA: Bocas del Toro: Wedel 413 (E-1218104), 1495 (E-1227974), 1601 (E-1218046). Canal Zone: Tyson 1070 (E-1813058), 2239 (E-1817251), 3525 (E-1836294); Tyson & Blum 3776 (E-1835352); P. White 243 (E-1193767); White & White 194 (E-1239974). Chiriquí: Woodson & Schery 835 (E-1208878). Darién: Duke 5368 (E-1814166), 13621 (Oh); Kirkbride & Bristan 1602 (E-1983552, N); Tyson, Dwyer, Blum, & Duke 4825 (E-1835141). Panamá: G. W. Barclay 2496 (W-2779869); Duke 3835 (E-1812212), 12045 (E-1891973); Mowbray, Correa, & Stimson 5044 (E-1900767). Province undetermined: Bristan 188 (N). TABOGA ISLAND: Woodson, Allen, & Seibert 1454 (E-1169746). PEARL ISLANDS: Saboga: Tyson 5594 (E-1980768). BAHAMA ISLANDS: Cat: Byrne 280 (N, Ws). New Providence: O. Russell s.n. [Correll & Popenoe 46961] (N). TURKS AND CAICOS ISLANDS: North Caicos: D. S. Correll 43296 (Ld). JAMAICA: C. D. Adams 5429 (Mu); Barkley & Proctor 38731 (Ld); Crosby, Hespenheide, & Anderson 95 (Ld). HISPANIOLA: Dominican Republic: Ekman H.12527 (Ld); Jacquemont s.n. [Marquisant, 1827] (P); Liogier & Liogier 26451 (N). PUERTO RICO: A. A. Heller 6181 (Ms-30931); Otero 249 (Ld). VIRGIN ISLANDS: St. Croix: F. R. Fosberg 54129 (N, W-2670188). LEEWARD ISLANDS: Dominica: K. L. Chambers 2783 (W-2468675); Kimber 841 (Ws); Webster & Webster 13192 (W-2469006). WINDWARD ISLANDS: Barbados: L. M. Andrews 680 (N). Grenada: Proctor 16932 (W-2613796). Martinique: Kimber 1497 (Ws); Larsen & Larsen 35219 (Ac). St. Lucia: Proctor 18127 (W-2585104). TRINIDAD & TOBAGO: Tobago: L. M. Andrews 3-52 (N). TRINIDAD OFFSHORE ISLANDS: Little Tobago: Dinsmore JJD.19 (Ws). WEST INDIES: Island undetermined: Herb. Mus. Paris D.31 (E-1652083). COLOMBIA: Antioquia: López-Palacios 3851 (Ld, N). Arau-

ca: López-Palacios 3933 (Ld, N). Bolívar: Castañeda 9654 (N). Magdalena: H. H. Smith 545 (Ws). VENEZUELA: Mérida: Ruiz-Terán & López-Palacios 6176 (N). Sucre: Ruiz-Terán & López-Palacios 9896 (Ld). Zulia: López-Palacios 1850 (Ft). SURINAM: Nurmohammed & Reijenga s.n. [20-III-1963] (Ws). ECUADOR: Esmeraldas: Sparre 15313 (S), 15477 (S). Guayas: Asplund 15373 (N). Los Ríos: Dodson 5633 (W-2747906); Sparre 14441 (S). Manabí: MacBryde 1049 (N). GALAPAGOS ISLANDS: Charles: Howell 8875 (Gg-462960, W-281447). Chatham: Howell 8606 (Gg-462944). Indefatigable: López-Palacios 4295 (Ld); Wiggins & Porter 693 (Ld). PERU: Loreto: F. R. Fosberg 28905 (Ld), 29002 (W-2722044), 29059 (Ac); Martin & Lau-Cam 1245 (Oa). San Martín: Belshaw 3208 (Ba, Ld, Ld, N); Schunke Vigo 4955 (N, W-2796743); Woytkowski 35063 (Ca-1190472, E-1806587). BRAZIL: Amazonas: Maas & Maas 212 (Ut-3286338).

PRIVA LAPPULACEA f. ALBIFLORA Mold., Phytologia 17: 114. 1968.

Additional bibliography: Mold., Biol. Abstr. 49: 11291. 1968; Mold., Phytologia 17: 114. 1968; Mold., Résumé Suppl. 16: 2, 4, & 5 (1968) and 17: [1] & 2. 1968; Hocking, Excerpt. Bot. A.15: 422. 1970; Mold., Fifth Summ. 1: 56, 73, 85, 91, 109, 119, 126, & 138 (1971) and 2: 906. 1971; Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 81 & 147. 1973; Mold., Phytologia 25: 228 (1973), 28: 436 (1974), and 31: 379, 380, & 383. 1975; López-Palacios, Revist. Fac. Farm. Univ. Andes 15: 74. 1975; Mold., Phytologia 34: 256 (1976) and 36: 30 & 33. 1977; López-Palacios, Fl. Venez. Verb. 511 & 652. 1977; Mold., Phytologia 43: 333. 1979.

Recent collectors describe this plant as a straggly or erect, unarmed, subwoody herb, usually 0.2-0.8 m. tall, or "arching to 6 feet" [Duke 8723], the stems quadrangular, fistulose or [when mature] very medullose, the leaves dull pale-green, the flowers 1/4 inch across, blooming in the morning, the anthers yellow or pale-yellow, and the fruit green. Wedel, on his no. 2834, calls it a "shrub 2 1/2" feet tall, but I doubt if this plant is ever a true shrub. Ventura says "las hojas se pegan en la ropa abundante". The corollas are usually described as "white", but are said to have been only "whitish" on Croat 23802 and Ruiz-Terán & López-Palacios 9733.

Collectors have found this plant growing in primary and open forests, rainforests, moist thickets, wettish coppices, the rich soil of fallow fields, rocky clay riparian soil, pastures, acahual, flatland matorral, and cleared roadways, as well as along the edges of ditches and streams, railroad tracks, and roadsides, at altitudes of 5 to 900 meters, flowering from June to February, in fruit in June, July, October, and December. King found it "in partial shade, sandy roadsides in grazed areas [of Oaxaca, Mexico], the vegetation mainly of thorny leguminous trees, shrubs, and cacti; not abundant". Wilbur and his associates refer to it as "common in weedy fields" on Dominica island; Fosberg reports it

only "local" on Indefatigable island; while Croat found it "common in clearings" and "prevalent on limestone outcrops" in Belize.

Vernacular names reported for P. lappulacea f. albiflora are "cadillito", "cadillo de bola", "cadillo de bolsa", "cadillo pegajoso", "pegajosa", "pegapega", and "sacalotodo".

López-Palacios (1977) cites from Venezuela the following collections: Falcón: Breteler 4380; Lasser & Foldata 3030, 3056. Mérida: Ruiz-Terán & López-Palacios 6176. Zulia: López-Palacios 3000.

Most of the following list of collections were distributed and many even cited by me (before the present taxon was recognized) as typical P. lappulacea (L.) Pers. Material has also been misidentified and distributed in some herbaria as "Boraginaceae".

Citations: TEXAS: Hidalgo Co.: Fleetwood 8015 [4 June 1964] (Au—229461), 8015 [9 June 1964] (Au—231162). MEXICO: Chiapas: Moldenke & Moldenke 2287 (Ld). Guerrero: Herald & Clark 339 (Au—247180); Hinton 10366 (K, N); Troublefield & Rowell 2808 (Mi). México: Hinton 4360 (N, N). Michoacán: Hinton 13941 (Au, La, Ld, N, Se—187210, Ur), 13975 (Au, Ld, N, N, N, Se—187208). Oaxaca: R. M. King 741 (Au—214226, Ld), 1229 (Mi). Veracruz: Martínez Calderón 1947 [Rec. Inf. DOO3918] (Mi); Ventura A.5801 (Ld, Mi, Sd—89009). BELIZE: Croat 23802 (N, N), 23861 (N). EL SALVADOR: Morazán: Tucker 501 (Ba, Ca—1000902, Ld, Mi, N, Vi). PANAMA: Bocas del Toro: Lewis, Dwyer, Elias, & Robertson 926 (E—1881976—type, E—iso-type, W—2589451—iso-type). Canal Zone: P. C. Standley 27157 (Cp, W—1217427). Chiriquí: Liesner 83 (W—2745302). Darién: Duke 8723 (Ac, E—1836295). Panamá: Lewis, Blackwell, Hawker, Nowicke, Oliver, Robyns, & Verhoek 3028 (W—2788364). Colon Island: Wedel 2834 (E—1245168, Mi, N). BAHAMA ISLANDS: Crooked: Correll & Proctor 48844 (N). San Salvador: D. S. Correll 43873 (N). LEEWARD ISLANDS: Dominica: Wilbur, Dunn, Hespenheide, & Wiseman 7571 (Mi, W—2534439). COLOMBIA: Bolívar: Castañeda 9279 (N). Cundinamarca: López-Palacios 3629 (Ld). Magdalena: Cuatre-casas & Castañeda 24920 (W—2325692); Kirkbride 2528 (N). VENEZUELA: Bolívar: Ruiz-Terán & López-Palacios 11547 (Mi). Delta Amacuro: Ruiz-Terán & López-Palacios 9733 (Ld). Falcón: Breteler 4380 (N, W—2465527). Zulia: López-Palacios 3000 (Ac, N). ECUADOR: El Oro: López-Palacios 4103 (Ld). GALAPAGOS ISLANDS: Indefatigable: F. R. Fosberg 44862 (W—2828127, Z).

PRIVA MEXICANA (L.) Pers., Syn. Pl. 2: 139. 1806.

Additional & emended synonymy: Verbena mexicana L., Syst. Nat., ed. 10, 2: 852. 1759. Priva mexicana Pers. ex Desf., Tabl. Écol. Bot., ed. 2, 65. 1815 [not P. mexicana Sieber, 1841]. Zapania mexicana Lam. ex Schau. in A. DC., Prodr. 11: 534, in syn. 1847. Verbena mexicana trachelii fol. &c. Dill. ex Buek, Gen. Spec. Syn. Candoll. 3: 495, in syn. 1858. Zapania hispida Zuccagni ex Buek,

Gen. Spec. Syn. Candoll. 3: 507, in syn. 1858. Verbena mexicana Trachelii folio, fructu Aparine Dill. ex Druce & Vines, Dill. Herb. 182. 1907. Priva lappula Andrews, in herb.

Additional & emended bibliography: Dill. in Ray, Synop. Meth. Stirp. Brit., ed. 3, pl. 302, fig. 389. 1724; L., Sp. Pl., ed. 1, imp. 1, 1: 19. 1753; L., Syst. Nat., ed. 10, 2: 852. 1759; L., Sp. Pl., ed. 2, 28. 1762; Crantz, Inst. Rei Herb. 1: 572. 1766; [Retz.], Nom. Bot. 11. 1772; J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 1, 2: 41 (1789) and ed. 13, imp. 2, 2: 41. 1796; Raeusch., Nom. Bot., ed. 3, 3: 1797; Ruiz & Pav., Fl. Peruv. Chil. 1: 21. 1797; Balbis, Cat. Pl. Hort. Bot. Taur. 48. 1804; Desf., Tabl. Écol. Bot., ed. 1, 54. 1804; Balbis, Cat. Stirp. Hort. Acad. Taur. 80. 1813; Desf., Tabl. Écol. Bot., ed. 2, 65. 1815; H.B.K., Nov. Gen. Sp. Pl., ed. folio, 2: 224—225 (1817) and ed. quarto, 2: 278. 1818; Pers., Sp. Pl. 3: 348—349. 1819; Steud., Nom. Bot. Phan., ed. 1, 111, 657, & 873. 1821; Jan, Elench. Pl. 1. 1824; Sweet, Hort. Brit., ed. 1, 1: 324. 1826; G. Don in Loud., Hort. Brit., ed. 1, 246. 1830; Sweet, Hort. Brit., ed. 2, 418. 1830; Loud., Hort. Brit., ed. 2, 552. 1832; G. Don in Loud., Hort. Brit., ed. 2, 246 (1832) and ed. 3, 246. 1839; Sweet, Hort. Brit., ed. 3, 552. 1839; Voigt, Hort Suburb. Calc. 473. 1845; Buek, Gen. Spec. Syn. Candoll. 3: 367, 368, 495, & 507. 1858; Kuntze, Rev. Gen. Pl. 2: 509. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 628. 1894; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Druce & Vines, Dill. Herb. 182. 1907; Loes., Verb. Bot. Ver. Brand. 53: 80. 1912; Kobuski, Ann. Mo. Bot. Gard. 13: 1, 4, 7, 20—21, 24, & 32—[35], pl. 4 & 5, fig. 15 & 24. 1926; Wangerin, Justs Bot. Jahresber. 54 (1): 1170. 1932; Mold., Geogr. Distrib. Avicen. 4, 14, & 15. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 14, 18, 20, 74, & 99. 1942; Savage, Cat. Linn. Herb. Lond. 4. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 2: 628. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 25, 32, 36, 47, 163, & 195. 1949; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 2: 628. 1960; Rzedowski & McVaugh, Contrib. Univ. Mich, Herb. 9: 39 & 107. 1966; Mold., Phytologia 14: 394—397. 1967; Mold., Résumé Suppl. 15: 22. 1967; Sanchez Sanchez, Fl. Val. Mex., ed. 1, 326—327. 1969; El-Gazzar & Wats., New Phytol. 69: 483 & 485. 1970; Gibson, Fieldiana Bot. 24 (9): 219 & 221. 1970; Mold., Phytologia 23: 415 & 416. 1972; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Molina R., Ceiba 19: 96. 1975; López-Palacios, Fl. Venez. Verb. 505 & 652. 1977; Mold., Phytologia 36: 47 & 48. 1977.

Additional illustrations: Kobuski, Ann. Mo. Bot. Gard. 13: [33] & [35], pl. 4 & 5, fig. 15 & 24. 1926; Sanchez Sanchez, Fl. Val. Mex., ed. 1, fig. 261 D. 1969.

Recent collectors describe this plant as a perennial herb or "large bush", virgate, to 1 m. tall, the fruit adherent, "sticky, greenish-blue". They have found it growing in lava fields, gullies, xerophytic matorral, and scrubland on mountainsides, along streams, on Laurea deserts, steep rocky volcanic outcrops, mountain slopes, and the edges of woods, at 600—2600 m. altitude, flowering from June to November, fruiting from July to October.

Bautista encountered it in "pastizal con matorral" and Rzedowski on "ladera andesítica con vegetación de matorral de Eysenhardtia polystachya". The Molinas refer to it as "occasional" on grassy slopes in Guatemala. Reeves found it on desert flats with Opuntia, Agave, Yucca, Prosopis, Tillandsia, and Jatropha.

Henrickson encountered P. mexicana "in lower limestone canyons in Tamaulepian-like scrub, infrequent in shaded margins of arroyos with Quercus, Cercis, Juglans, Croton, Rhus, Baccharis, Amelanchier, etc.", "common in shaded ravines in igneous canyons on disturbed sides of larger canyons with Acacia, Parthenium, Salvia, Dasyliirion, Larrea, Perezia, grasses, etc.", "frequent in lower chaparral with Acacia, Bernardia, Mimosa, Mortonia, Bouvardia, Dasyliirion, Cordia, Opuntia, and Eysenhardtia", and "frequent along streams in heavily pastured oak-pifion forests with Quercus, Pinus cembroides, Stevia, Salvia, etc." Chiang and his associates report finding it "very local with Larrea tridentata, Acacia neovernicosa, and Dasyliirion sp. on steep hills of igneous rock in gravelly sandy soil in matorral desertico inerme y con espinas laterales". The Roes found it growing on moss-covered rocks in Quercus forests on rocky hillsides with many shrub composites, mosses, and ferns. Barkley and his associates encountered it on xeric sunny lava and in moist rich shady pockets in pedregal. Ugent and his associates found it in "Acacia - Senecio - Apontia thickets bordering fields of Pisum sativum with Solanum bulbo-castrum."

The corolla of Priva mexicana is said to have been "purple" on Rzedowski 1192, 3854, 4942, & 28601, "pink" on Lundell & Lundell 12351, "pinkish" on Molina R. & Molina 24923, "lavender-pink" on Moore 1459 & 1792, "pale-lavender" on Moore & Wood 4193, and "purple-red, upper lip lined, tube pale" on McVaugh 16665.

Sweet (1826), Don (1830), and Loudon (1832) all assert that P. mexicana was introduced into English garden cultivation from Mexico in 1726. Common names recorded for it include "Mexican priva", "pegaropa", "priva du Mexique", and "verveine du Mexique".

It should be noted here that the H.B.K. publication dates as given in the bibliography above have been verified by Barnhart (1902). The title-page date of Linnaeus' 1759 work is "1760". The specific epithet of P. mexicana is frequently, even now, upercased. Chiang and his associates note that the species "resembles Verbena runyoni Mold.", but any such resemblance is fanciful! Loesener (1912) cites Seler 1201 & 1221.

The nomenclatural type of Priva mexicana is Herb. Linnaeus 35/4 in the Linnean Herbarium, London, which is inscribed "mexicana" in Linnaeus' own handwriting. His original description (1753) is "VERBENA diandra, spicis laxis, calycibus fructus reflexo-pendulis subglobosis hispidis" and he cites only the Dillenius synonym. In 1762 he modified this to "VERBENA diandra,



spicis laxis, calycibus fructu reflexis rotundato didymis hispidis", adding "Caulis tetragonus, marginibus scaber : Rami oppositi superne dichotomi, Racemi dichotomiae longi. Folia cordata, oblonga, scabra, petiolis brevissimis", still citing only the Dillenius synonym.

Material of P. mexicana has been misidentified and distributed in some herbaria as P. lappula Andrews, P. lappulacea (L.) Pers., and Phryma sp. (Phrymaceae).

Additional citations: MEXICO: Aguascalientes: R. McVaugh 16665 (N). Chihuahua: Chiang, Wendt, & Johnston 8935 (Ld); Pringle 1354 (Ms--30929). Coahuila: Barkley, Webster, & Rowell 7213 (Au--123251); Henrickson 11729 (Ld), 13264 (Ld). Federal District: Barkley, Webster, & Rowell 7322 (Au--123249); Bautista s.n. [20/VIII/1967] (Ip); Bopp O.216 (Ip); J. Rzedowski 1192 (Au--241247, Ip), 28601 (Mi). Hidalgo: Lundell & Lundell 12382 (Ld); H. E. Moore 1459 (Ba), 1792 (Ba); Moore & Wood 4193 (Ba, Mi). México: Cruz Cisneros 277 (Mi); Lundell & Lundell 12351 (Mi). Nuevo León: Flyr 1562 (Au); R. F. Smith M.356 (Au--217531). Oaxaca: Ugent, Ugent, & Flores C. 2699 (Ws). San Luis Potosí: T. Reeves R.6288 (Ld); Roe & Roe 2372 (Ld); J. Rzedowski 4942 (Au--243794), 3800 (Au--243256), 3854 (Ip); Waterfall 15684 (W--2640738). Tamaulipas: Stanford, Lauber, & Taylor 2063 (Se--203277), 2674 (Se--203083), 2680 (Se--161422). Zacatecas: Henrickson 13291 (Ld), 13377 (Ld). GUATEMALA: Guatemala: L. M. Andrews 131 (N), 132 (N). Progreso: Molina R. & Molina 24923 (N). Sacatepéquez: Breedlove 11410 (Ld).

PRIVA MEYERI Jaub. & Spach, Ill. Pl. Orient. 5: [57]. 1855.

Additional synonymy: Priva leptostachya H. H. W. Pearson ex C. A. Sm., Common Names S. Afr. Pl. 601, in syn. 1966 [not P. leptostachya Auct., 1962, nor A. L. Juss., 1806, nor L., 1940].

Additional & emended bibliography: Jaub. & Spach, Ill. Pl. Orient. 5: [57]. 1855; Kobuski, Ann. Mo. Bot. Gard. 13: 9 & 24. 1926; Mold., Geogr. Distrib. Avicen. 30--32. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49--52 & 99. 1942; J. Hutchins., Botanist South. Afr. 356. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 116, 117, 119, 122, & 195. 1949; W. G. Wright, Wild Fls. South. Afr. 156 & 158. 1963; R. H. Compton, Journ. S. Afr. Bot. 6: 65. 1966; C. A. Sm., Common Names S. Afr. Pl. 111, 112, & 601. 1966; Mold., Phytologia 14: 397--398. 1967; Amico & Bavazzano, Webbia 23: 280. 1968; Mold., Résumé Suppl. 16: 8 & 25. 1968; Van der Schijff, Check List Vasc. Pl. Kruger Natl. Park 81. 1969; Drar, Publ. Cairo Univ. Herb. 3: 110. 1970; Mold., Fifth Summ. 1: 234, 238, 248, 252, 253, 255, & 257 (1971) and 2: 613 & 906. 1971; Mold., Phytologia 25: 231 (1973) and 43: 331 & 424. 1979.

Additional illustrations: W. G. Wright, Wild Fls. South. Afr. 158 [as P. leptostachya]. 1963.

Recent collectors describe this species as a very glandular, e-

rect or lax-stemmed, small to fairly large herb, to 1 m. tall, the stems herbaceous, single or a few, erect, square, the flowers small, the fruiting-calyx "bur-like", and the "fruit" inflated. They have found it growing in grass, along roadsides, and in sandy soil among coastal vegetation and on savannas, at altitudes of 2000-2800 feet, flowering in February, March, and December, in fruit in December, March, and April. The corollas are said to have been "white" on Bayliss BS.8226 and Leach 11303 and "white, the lower lip striped with purple, as well as the mouth and throat". Compton (1966) records the species from Swaziland. Smith (1966) lists the vernacular names, "blaasklits", "blasieklits", and "blasieklitsbossie".

The "P. leptostachya" of Wright (1963) seems definitely to be P. meyeri instead; the P. leptostachya accredited to "Auct." is P. adhaerens (Forsk.) Chiov., that of Jussieu is P. cordifolia (L. f.) Druce, while that credited to Linnaeus is Phyrma leptostachya L. in the Phrymaceae.

The Jaubert & Spach original reference for this species is often cited as "1853-1856", but the page involved here was issued in 1855.

Wright (1963) notes that the seeds of P. meyeri "are ground up and applied to sores by the Zulus, who also use an infusion of the leaf for inflamed eyes".

Van der Schijff (1969) cites his nos. 1708 & 1945 and "C.5249" from Kruger National Park; Hutchinson (1946) cites his no. 2341; Amico & Bavazzano (1968) cite their no. 394; and Drar (1970) cites his no. 1750.

Material of P. meyeri has been misidentified and distributed in some herbaria as P. cordifolia var. flabelliformis Mold. and P. leptostachya Juss. On the other hand, the Mogg 13522 and Strey 4869, distributed as P. meyeri, actually are P. cordifolia var. australis Mold.

Additional & emended citations: SUDAN: Bahr El Ghazzal: Drar & Mahdi 1750 (Gz, Gz). RHODESIA: Leach 11303 (Mu). MOZAMBIQUE: Lourenço Marques: Marques 2429 (Mu). SOUTH AFRICA: Cape Province: Bayliss BS.8226 (N, W--2831315); Bolus 306 (F--439662); Drège a [Mo. Bot. Gard. photo A.866] (E--118803--cotype, W--photo of cotype); MacOwan s.n. [Boschberg] (F--46279); Stopp M.63 (Mu). Natal: Collector undetermined 2202 [Mo. Bot. Gard. photo A.866] (W--photo). Transvaal: Scheepers 522 (Mu).

PRIVA MEYERI var. MADAGASCARIENSIS Mold., Phytologia 3: 276. 1950.

Additional bibliography: Mold., Phytologia 14: 398. 1967; Mold., Fifth Summ. 1: 262 (1971) and 2: 906. 1974.

PRIVA PEDICELLATA Mold., Geogr. Distrib. Avicen. 32, nom. nud.

1939; Phytologia 1: 429-430. 1940.

Additional & emended bibliography: Mold., Geogr. Distrib. Avi-

cenn. 32. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 55 & 99 (1942) and ed. 2, 129 & 195. 1949; Mold., Phytologia 14: 398. 1967; Mold., Fifth Summ. 1: 284 (1971) and 2: 906. 1971.

PRIVA PERUVIANA Mold., Feddes Repert. Spec. Nov. 41: 23—24. 1936.

Additional bibliography: Mold., Geogr. Distrib. Avicen. 24. 1939; J. F. Macbr., Field Mus. Publ. Bot. 13 (5): 659 & 660. 1960; Mold., Phytologia 14: 398. 1967; Mold., Fifth Summ. 1: 143 (1971) and 2: 906. 1971; Soukup, Biota 11: 16. 1976.

Macbride (1960) distinguishes this species from P. lappulacea (L.) Pers. by the following key:

Stems and petioles pilose; cocci quadrangular.....P. lappulacea.

Stems and petioles puberulent; cocci subspheroid.....P. peruviana.

Additional citations: PERU: Amazonas: Mathews 3158 (Pd—isotype).

PRIVA PORTORICENSIS Urb., Symb. Antill. 4: 534. 1903.

Additional bibliography: Kobuski, Ann. Mo. Bot. Gard. 13: 2, 3, 6, 8, 24, & 32—[35], pl. 4 & 5, fig. 7 & 16. 1926; Wangerin, Justs Bot. Jahresber. 54 (1): 1170. 1832; Mold., Geogr. Distrib. Avicen. 8. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 27 & 99. 1942; J. F. Macbr., Field Mus. Publ. Bot. 13 (5): 661. 1960; Mold., Phytologia 14: 398. 1967; Mold., Fifth Summ. 1: 105 (1971) and 2: 778 & 906. 1971.

Illustrations: Kobuski, Ann. Mo. Bot. Gard. 13: [33] & [35], pl. 4 & 5, fig. 7 & 16. 1926.

Emended citations: PUERTO RICO: Sintenis 3597 (E—925408—photo of cotype, W—403990—cotype). MOUNTED ILLUSTRATIONS: Kobuski drawing 7 (E—925406), 16 (E—925405).

PRIVA SOCOTRANA Mold., Feddes Repert. Spec. Nov. 41: 38—39. 1936.

Additional bibliography: Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14358. 1958; Hocking, Excerpt. Bot. A.12: 425. 1967; Mold., Phytologia 14: 398. 1967; Mold., Biol. Abstr. 49: 4199. 1968; Mold., Fifth Summ. 1: 265 (1971) and 2: 906. 1971.